



California Sportfishing Protection Alliance

"An Advocate for Fisheries, Habitat and Water Quality"

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21 September 2006

Mr. Robert Schneider, Chairman
Ms. Pamela Creedon, Executive Officer
Mr. Kenneth Landau, Principal WRCE
Ms. Diana Messina, Sr. WRC Engineer
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6144

VIA: Electronic Submission
Hardcopy if Requested

RE: Tentative Waste Discharge Requirements (NPDES No. CA008348) and
Monitoring and Reporting Program for University of California, Davis, Center for
Aquatic Biology and Aquaculture

Dear Messrs Schneider, Landau and Mesdames Creedon, Messina:

The California Sportfishing Protection Alliance, Watershed Enforcers and San Joaquin Audubon (CSPA) has reviewed the Central Valley Regional Water Quality Control Board's (Regional Board) tentative NPDES permit (Order or Permit) for the University of California, Davis, Center for Aquatic Biology and Aquaculture (Discharger). The proposed Permit is for the regulation of fisheries research facilities at the University of California, Davis Campus. We are supportive of fishery research, however not at the expense of water quality. The following comments demonstrate that the proposed Permit is not protective of the beneficial uses of the receiving stream.

CSPA requests designated party for this proceeding. CSPA is a 501(c)(3) conservation and research organization established in 1983 for the purpose of conserving, restoring, and enhancing the state's fishery resources and their aquatic ecosystems and associated riparian habitats. CSPA has actively promoted the protection of water quality and fisheries throughout California before state and federal agencies, the State Legislature and Congress and regularly participates in administrative and judicial proceedings on behalf of its members to protect, enhance, and restore water quality and aquatic resources. CSPA members reside, boat, fish and recreate in and along waterways throughout the Central Valley.

- 1. The Discharger has submitted an incomplete RWD and in accordance with Federal Regulations 40 CFR 122.21 (e) and 122.4 the Regional Board shall not adopt the proposed permit**

Federal Regulation, 40 CFR 122.21(e) states in part that: “The Director shall not issue a permit before receiving a complete application for a permit except for NPDES general permits. An application for a permit is complete when the Director receives an application form and any supplemental information, which are completed to his or her satisfaction. In this case proposed Permit Finding No. 23 clearly states that the Regional Board required, on numerous occasions, that the Discharger characterize the wastewater discharge for priority pollutants, specifically California Toxics Rule (CTR) and National Toxics Rule (NTR) constituents. The proposed Permit, Finding No. 23, clearly states that the Discharger did not comply with Regional Board’s requirements for submittal of data. Consequently, the application for permit renewal is incomplete. The completeness of any application for a permit shall be judged independently of the status of any other permit application or permit for the same facility or activity. The California Toxics Rule (CTR)(40 CFR 131, Water Quality Standards) contains water quality standards applicable to this wastewater discharge. The final due date for compliance with CTR water quality standards for all wastewater dischargers in California is May 2010. The State’s *Policy for Implementation of Toxics standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP), Section 1.2, requires wastewater dischargers to provide all data and other information requested by the Regional Board before the issuance, reissuance, or modification of a permit to the extent feasible. The Discharger did not submit a characterization of the wastewater discharge in terms of priority pollutants. Therefore, for priority pollutants, there is no information in the proposed Permit fact sheet that adequately discusses a reasonable potential analysis in accordance with Federal Regulation 40 CFR 122.44. The application for permit renewal is incomplete and in accordance with 40 CFR 122.21(e) the Regional Board cannot issue a permit.

The Regional Board has failed to take any enforcement action against the Discharger for failing to adequately characterize its wastewater discharge to surface waters. Proposed Permit, Provision No. 3, requires submittal of a final study report of priority pollutants within 21 months of adoption of the proposed Permit. Assuming that the Regional Board intends to consider adoption of the Permit in October 2006, the final report would be due in June 2008. Final compliance with CTR water quality standards must be accomplished by May 2010, less than two years later. We have heard wastewater Dischargers testify time and again at Regional Board hearings that 5-year compliance schedules are not adequate to conduct a CEQA analysis, plan, design and construct treatment processes. The proposed Permit schedule is far too lax and will not adequately bring the discharge into compliance within the allowable time frame.

Proposed Permit Finding No. 10 observes that the wastewater discharge may reasonably contain organic nitrogen and organic phosphorus and toxic pollutants such as copper, lead, nickel and zinc. As stated in the above paragraphs, the Discharger has not adequately characterized the wastewater discharge and, consequently, has failed to submit a complete application for permit renewal. Since the Regional Board has issued several notices that the Discharge is non-compliant for characterizing the discharge for CTR and NTR constituents, the Executive Officer could not have found the application to be complete in accordance with 40 CFR 122.21(e). The application for permit renewal is

incomplete and in accordance with 40 CFR 122.21(e) the Regional Board shall not issue a permit. Also, Federal Regulation 40 CFR 122.4 states that no permit shall be issued for any discharge when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, the Regional Board cannot assure that the proposed Permit complies with the CTR, the NTR, the Basin Plan or the SIP.

2. Proposed Permit Discharge Prohibition No. 4 appears to allow the surface water discharge of Malachite-Green and Nitrofurazone and other aquacultural drugs and/or chemicals simply by notifying the Regional Water Board in violation of Federal Regulation, 40 CFR 122.4 (a), (d) and (g)

Proposed Permit Discharge Prohibition No. 4 prohibits the discharge of Malachite-Green and Nitrofurazone and other aquacultural drugs and/or chemicals unless the Regional Water Board is notified. There are no effluent limitations for these constituents in the proposed Permit. There is no discussion of the use of these constituents in the proposed Permit or the Fact Sheet. The discharge of Malachite-Green and Nitrofurazone and other aquacultural drugs and/or chemicals would be a substantial change in the character of the discharge. Federal Regulations 40 CFR 122.62 (a)(1) and the California Water Code, Section 13264, require submittal of a new Report of Waste Discharge for substantial and/or material changes to a discharge. Federal Regulation, 40 CFR 122.4 (a), (d) and (g) require that no permit may be issued when, 1) the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, 2) or regulations promulgated under the CWA or 3) when imposition of conditions cannot ensure compliance with applicable water quality requirements or 4) for any discharge inconsistent with a plan or plan amendment approved under Section 208(b) of the CWA. Proposed Permit Discharge Prohibition No. 4 must be amended to simply prohibit the discharge of these constituents.

3. The Basin Plan, Implementation, Page IV-24-00, prohibits the discharge of wastewater to low flow streams as a permanent means of disposal and requires the evaluation of land disposal alternatives, Implementation, Page IV-15.00, Policies and Plans (2) Wastewater Reuse Policy

The Basin Plan, Implementation, Page IV-24-00, Regional Water Board prohibitions, states that: "Water bodies for which the Regional Water Board has held that the direct discharge of waste is inappropriate as a permanent disposal method include sloughs and streams with intermittent flow or limited dilution capacity." The proposed Permit characterizes the receiving stream as low flow, or ephemeral, with no available dilution. The proposed Permit does not discuss any efforts to eliminate the discharge to surface water and compliance with the Basin Plan Prohibition. Federal Regulation 40 CFR 122.4 states that no permit shall be issued for any discharge when the conditions of the permit do not provide for compliance with the applicable requirements of the CWA and are inconsistent with a plan or plan amendment. The Permit must be amended to require that the Discharger develop a workplan to eliminate the wastewater discharge to surface water in accordance with the Basin Plan.

This discharge can, in accordance with the cited Basin Plan Prohibition, reasonably be eliminated by diverting flows to the campus wastewater treatment plant where it will receive a tertiary level of treatment reducing the threat of discharging problematic levels of pollutants as was determined in the reasonable potential analysis and the yet to be conducted priority pollutant assessment. The University of California at Davis is also a major landholder. The Basin Plan's Wastewater Reuse Policy, at IV-15.00, requires the Discharger to submit a land disposal and reuse analysis as a part of its Report of Waste Discharge. This analysis does not appear to have been submitted since it is not discussed in the proposed Permit. The Permit must be amended to require that the Discharger develop a workplan to eliminate the wastewater discharge to surface water in accordance with the Basin Plan.

4. The identified wetlands are waters of the state and the proposed Permit is not sufficient to assure compliance with the applicable requirements of the CWA

The proposed Permit, Finding No. 3, states that the wetlands is a part of the treatment process and is therefore not considered a water of the state. The Permit however contains no supporting documentation that any "treatment" occurs in the wetlands. Actually, from reading the proposed Permit and Fact Sheet there does not appear to be any treatment process at this facility. If the wetlands are providing removal of pollutants, i.e. "treatment," the permit should verify that this is the case. Otherwise it appears that the wetlands are simply a means of wastewater disposal by evaporation, evapotranspiration and percolation. If so, the wetlands must be regulated as a water of the state. As a water of the state, Federal Regulation 40 CFR 122.4 requires that no permit shall be issued for the discharge since the proposed Permit does not provide for compliance with the applicable requirements of the CWA and include Effluent Limitations, Receiving Water Limitations and Prohibitions sufficient to protect the beneficial uses of the receiving water (the wetlands).

5. The proposed Permit improperly states that wastewater is discharged to "reclamation"

The proposed Permit, Finding No. 7, states that 0.36 mgd of fishery wastewater is discharged to "reclamation." However, "reclamation," as defined in Title 22 of the California Code of Regulations, solely applies to domestic wastewater. The proposed Permit should be modified to correctly state that the wastewater is discharged for irrigation, not reclamation.

6. The failure to adequately monitor discharges to the isolated evaporation percolation pond for disposal and numerous other unlined ponds and wetlands is unprotective of groundwater and fails to comply with the state's antidegradation policy

The proposed Permit, Finding No. 6, states that the DFG requires the Discharger chlorinate the wastestream discharged to the "isolated evaporation percolation pond".

There is clearly organic matter in the wastestream. Chlorine blended with organic matter can form trihalomethanes. However, the Discharger is not required to monitor the groundwater for trihalomethanes. It is not possible with the currently proposed groundwater monitoring to determine if the discharge of wastewater causes or contributes to exceedance of a water quality standard or objective.

The groundwater monitoring program requires that *total nitrogen* be “calculated”. Yet there are no parameters being measured from which to “calculate” total nitrogen. Ammonia, nitrate and organic nitrogen levels are not required to be sampled which could be used to “calculate” total nitrogen levels. Proposed Permit Finding No. 10 states that discharges from fisheries contain ammonia nitrogen and organic nitrogen. Ammonia and nitrates also have water quality standards, whereas total nitrogen does not, therefore it would be significantly more reasonable to sample for these constituents to determine if the discharge of wastewater causes or contributes to exceedance of a water quality standard or objective.

It is common knowledge that hexavalent chromium exists in groundwater in areas around the Davis Campus. The Discharger utilizes groundwater in the fishery. The Discharger is not required to sample the groundwater for hexavalent chromium. It is not possible with the currently proposed groundwater monitoring to determine if the discharge of wastewater causes or contributes to exceedance of the water quality standard for hexavalent chromium.

Finding No. 10 acknowledges that the discharge may contain phosphorus. The Discharger is not required to sample for phosphorus. It is not possible with the currently proposed groundwater monitoring to determine if the discharge of wastewater causes or contributes to exceedance of a water quality standard or objective for phosphorous.

Finding No. 10 acknowledges that the discharge may contain fecal coliform. The Discharger is not required to sample the groundwater for fecal coliform. It is not possible with the currently proposed groundwater monitoring to determine if the discharge of wastewater causes or contributes to exceedance of a water quality standard or objective for fecal coliform.

Finding No. 10 acknowledges that the discharge may contain high levels of BOD. The Discharger is not required to sample the groundwater for BOD. It is not possible with the currently proposed groundwater monitoring to determine if the discharge of wastewater causes or contributes to exceedance of a water quality standard or objective for BOD.

The proposed Permit contains surface water Effluent Limitations for cadmium, chromium and selenium based on the fact that these constituents presented a reasonable potential to exceed water quality standards. The Discharger is not required to sample the groundwater for cadmium, chromium and selenium. It is not possible with the currently proposed groundwater monitoring to determine if the discharge of wastewater causes or

contributes to exceedance of a water quality standard or objective for cadmium, chromium and selenium.

Finding No. 11 states that discharges from this facility can contain mercury, cadmium, pyrethroids, microcystin, beta naphthoflavone, estradiol, chloropyrophos, florfenicol and chloramines T. The Discharger is not required to sample groundwater for mercury, cadmium, pyrethroids, microcystin, beta naphthoflavone, estradiol, chloropyrophos, florfenicol and chloramines T. It is not possible with the currently proposed groundwater monitoring to determine if the discharge of wastewater causes or contributes to exceedance of a water quality standard or objective for these constituents.

The proposed groundwater sampling is significantly deficient. All of the constituents listed have a reasonable potential to migrate to groundwater when the wastewater is allowed to percolate in the unlined ponds. Lining of the wastewater disposal ponds may be best practicable treatment and control (BPTC) of the discharge. An antidegradation policy analysis, including review of BPTC practices, has not been conducted for this facility. In fact, an antidegradation analysis is not possible, given the inadequacies of the Report of Waste Discharge and the limited monitoring program required by the proposed Permit. Sampling for trihalomethanes, ammonia, nitrate, organic nitrogen, chromium, hexavalent chromium, phosphorus, fecal coliform, BOD, cadmium, selenium, mercury, cadmium, pyrethroids, microcystin, beta naphthoflavone, estradiol, chloropyrophos, florfenicol and chloramines T must be added to the monitoring requirements to determine if the discharge degrades groundwater quality and is in compliance with the state's Antidegradation Policy (Resolution No. 68-16).

7. The use of Best Management Practices (BMPs) does not conform to the Federal Regulations (40 CFR 122.44(k)) when numeric effluent limitations are feasible

Findings 41, 42 and 43 and Section E, Best Management Practices, require the Discharger develop and implement BMPs. Finding No. 41 discusses the Federal Regulation at 40 CFR 122.44 (k). Unfortunately, the Finding fails to cite the regulation in full and fails to discuss that numeric effluent limitations are feasible. The BMPs in Section E appear to be reasonable, if the sole intent is limiting the amount of fish food discharged to surface water. However, the proposed Permit does not discuss whether specific effluent limitations have been eliminated from the permit because of the application of the BMPs and why such effluent limitations would not be feasible. Nor does it discuss discharge alternatives; i.e., discharge to the sanitary sewer or land disposal. The proposed Permit is grossly deficient and must be modified to discuss whether the proposed BMPs have been substituted in lieu of more effective effluent limitations. The Fact Sheet fails to discuss the basis and rationale for the use of BMPs and, therefore, does not comply with federal regulations at 40 CFR §§ 124.8 and 124.56.

Proposed Permit Provision No. 5 requires at the end of the first paragraph that the Discharger must perform listed tasks prior to use of listed chemicals and then states: "...or any other chemical or antibiotic that may enter the wastewater discharge..." These

“Any other chemicals or antibiotics” have the potential to exceed water quality standards or objectives. An NPDES permit may not be issued that allows uncharacterized wastewater discharges that may exceed water quality standards or objectives and degrade the beneficial uses of the receiving stream. Federal Regulation, 40 CFR 122.4 (a), (d) and (g) require that no permit may be issued when, 1) the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, 2) or regulations promulgated under the CWA or 3) when imposition of conditions cannot ensure compliance with applicable water quality requirements or 4) for any discharge inconsistent with a plan or plan amendment approved under Section 208(b) of the CWA. Since the proposed Permit allows for “any other chemical or antibiotic” to potentially be discharged, there is no condition in the Permit that assures compliance with quality standards or objectives and therefore in accordance with 40 CFR 122.4, the Regional Board cannot issue the Permit as currently proposed. Effluent Limitations for “other chemicals or antibiotics” are feasible, unless clearly shown otherwise. Consequently, the proposed Permit fails to comply with Federal Regulation 40 CFR 122.44 (k).

8. The proposed Permit contains an Effluent Limitation for acute toxicity that allows mortality that exceeds the Basin Plan water quality objective and does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i)

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The Water Quality Control Plan for the Sacramento/ San Joaquin River Basins (Basin Plan), Water Quality Objectives (Page III-8.00) for Toxicity is a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This section of the Basin Plan further states, in part that, compliance with this objective will be determined by analysis of indicator organisms.

The Tentative Permit requires that the Discharger conduct acute toxicity tests and states that compliance with the toxicity objective will be determined by analysis of indicator organisms. However, the Tentative Permit contains a discharge limitation that allows 30% mortality (70% survival) of fish species in any given toxicity test.

For an ephemeral or low flow stream, allowing 30% mortality in acute toxicity tests allows that same level of mortality in the receiving stream, in violation of federal regulations and contributes to exceedance of the Basin Plan’s narrative water quality objective for toxicity. Accordingly, the proposed Permit must be revised to prohibit acute toxicity in accordance with Federal regulations, at 40 CFR 122.44 (d)(1)(i).

9. The proposed Permit does not contain Effluent Limitations for chronic toxicity and therefore does not comply with Federal regulations, at 40 CFR 122.44 (d)(1)(i)

Federal regulations, at 40 CFR 122.44 (d)(1)(i), require that limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including state narrative criteria for water quality. The Water Quality Control Plan for the Sacramento/ San Joaquin River Basins (Basin Plan), Water Quality Objectives (Page III-8.00) for Toxicity is a narrative criteria which states that all waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. The Tentative Permit states that: "...to ensure compliance with the Basin Plan's narrative toxicity objective, the discharger is required to conduct whole effluent toxicity testing...". However, sampling does not equate with or ensure compliance. The Tentative Permit requires the Discharger to conduct an investigation of the possible sources of toxicity if a threshold is exceeded. This language is not a limitation and essentially eviscerates the Regional Board's authority, and the authority granted to third parties under the Clean Water Act, to find the Discharger in violation for discharging chronically toxic constituents. An effluent limitation for chronic toxicity must be included in the Order. In addition, the Chronic Toxicity Testing Dilution Series should bracket the actual dilution at the time of discharge, not use default values that are not relevant to the discharge. Accordingly, the proposed Permit must be revised to prohibit chronic toxicity in accordance with Federal regulations, at 40 CFR § 122.44 (d)(1)(i).

10. The proposed Permit must include an effluent limitation for mercury

The proposed Permit, Finding No. 24, states that there is a reasonable potential for mercury concentrations to exceed water quality standards and that an Effluent Limitation is included in the permit. There is no effluent limitation included in the proposed Permit for mercury. Failure to include an Effluent Limitation in an NPDES permit for a constituent when there is a reasonable potential for a constituent to exceed a water quality standard violates Federal Regulation 40 CFR § 122.44.

11. The Discharger adds the antibiotic Oxytetracycline to fish food which in turn is discharged to surface waters. The proposed Permit does not contain an Effluent Limitation for Oxytetracycline which violates Federal Regulation, 40 CFR 122.4 (a), (d) and (g).

There is significant literature recently regarding the wastewater discharge of antibiotics and their significant impacts on the environment. CSPA is deep concerned by practice of releasing antibiotics into the environment when information is just beginning to emerge regarding their detrimental environmental impacts. The Discharger could also reasonably eliminate the surface water discharge of Oxytetracycline by isolating this portion of the wastestream to their "isolated evaporation percolation pond" for land disposal.

12. The Discharge Specifications/Pond Disposal Limitations Section of the proposed Permit fails to specify the "design seasonal precipitation" as 100 year

The Discharge Specifications/Pond Disposal Limitations (1)(f) and (3)(g) fail to specify the “design seasonal precipitation” as 100-year, which is the typical design standard prescribed by the Central Valley Regional Board. The Permit should be amended to specify the design season to prevent overflows from the ponds.

13. Proposed Permit Provision No. 3 requires the Discharger to conduct an assessment of CTR and NTR compliance which conflicts with the language in the Monitoring and Reporting Program which only requires sampling for priority pollutant metals

Proposed Permit Provision No. 3 requires the Discharger to conduct an assessment of CTR and NTR compliance. This conflicts with the language in the Monitoring and Reporting Program, Priority Pollutant Metals Monitoring, which states that: “The SIP states that the Regional Water Boards will require periodic monitoring (at least once prior to issuance and re-issuance of a permit) for pollutants with applicable criteria or objectives and no effluent limitations have been established in an existing permit. The Regional Water Board has determined that, based on priority pollutant data collected from this facility and similar aquaculture facilities, discharge of priority pollutants other than metals is unlikely.”

The above comments clearly identify a significant list of constituents beyond metals that are in the discharge. There is no information presented anywhere in the proposed Permit that supports that metals are the only constituents of concern from this facility. To the contrary, the above comments clearly identify a significant list of constituents beyond metals that are in the discharge. A partial list of the constituents, other than metals, that appear to be problematic are trihalomethanes, ammonia, nitrate, organic nitrogen, phosphorus, fecal coliform, BOD, pyrethroids, microcystin, beta naphthoflavone, estradiol, chloropyrophos, florfenicol and chloramines T, as detailed elsewhere in these comments.

14. The Effluent Limitation for formaldehyde is not protective of the beneficial uses of the receiving stream and is in excess of the Basin Plan chemical constituents water quality objective in violation of Federal Regulation 40 CFR 122.44

The Fact Sheet, page 13 Water Quality Based Effluent limitations (No. 2), fifth paragraph, lists that the US EPA IRIS reference dose recommended limitation for drinking waters is 1.4 mg/l for formaldehyde, the US EPA Drinking Water Health Advisory is 1.0 mg/l and the taste and odor threshold is 0.6 mg/l. Inexplicably, staff has proposed to base the Effluent Limitation on a bioassay conducted by DFG. This is apparently based on the incorrect statement that: “The taste and odor threshold for formaldehyde has been established as a 30-day average effluent limitation based on the Basin Plan’s chemical constituents objective.” There is no justification for stating that the taste and odor objectives are 30-day averages. Unlike drinking water standards based on risk assessments, taste and odor impacts occur instantaneously and under the chemical

constituents objective should be modified accordingly. Taste and Odor is a surface water quality objective in the Basin Plan. Failure to protect the Taste and Odor water quality objective by failure to utilize the US EPA recommended taste and odor objective for formaldehyde would be a violation of Federal Regulation 40 CFR 122.44.

Thank you for considering these comments. If you have questions or require clarification, please don't hesitate to contact us.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Jennings". The signature is fluid and cursive, with the first name "Bill" and last name "Jennings" clearly distinguishable.

Bill Jennings, Executive Director
California Sportfishing Protection Alliance